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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,870	05/25/2001	Simon Paul Davis	3036/49955	2274

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT PAPER NUMBER

2661

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/864,870

Applicant(s)

DAVIS ET AL.

Examiner

Van Kim T. Nguyen

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AC

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/20/01; 10/01/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: *Improvements in Packet Switches*.
  - Improper Arrangement of the Specification.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.

- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hughes et al (US 6,747,971).

Regarding claim 1, as shown in Figures 1-10, Hughes discloses a method of operating a packet switch (200) comprising a plurality of ingress means (304a-n), a plurality of egress means (306a-n), a cross-bar (305) and a controller (314), the cross-bar being connected between the ingress means and the egress means to transfer multicast (312a-n) and unicast (313) data traffic from the ingress means to the egress means; the method comprising the steps of:

- a) determining if the data traffic to be transferred is unicast or multicast (col. 6: lines 27-30, and col. 9: lines 7-17);
- b) if the data traffic is unicast, invoking a unicast schedule (col. 9: lines 33-47);

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- c) if the traffic is multicast, invoking a multicast schedule (col. 9: lines 48-63); and
- d) transferring the data traffic in accordance with the invoked schedule (cols. 2-17).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al (US 6,747,971), in view of Joo et al (US 5,963,552).

Regarding claim 2, Hughes discloses all the claimed limitations, but does not explicitly call for step c) to further comprise forming a multicast cell fanout table containing current fanout requirements for a cell at the head of a multicast queue in each ingress means.

As shown in Figures 1-8, Joo teaches forming a multicast cell fanout table (22) containing current fanout requirements (MCN and VPI/VCI information) for a cell (col. 3: line 66- col. 4: line 6; and col. 4: lines 38-41).

As multicasting provides an efficient way to transmit information from point-to-multipoints, it would have been obvious to one of ordinary skill in the art at the time the invention was made necessary transmitting information for a cell contained in the multicasting routing table can be used in Hughes' crosspoint switch scheduler, motivated by the need to conserve bandwidth and improve efficiency of the communications system.

***Claim Rejections - 35 USC § 103***

Regarding claim 3, the combination of Hughes and Joo also discloses setting eligible bits (“1”) for multicast cells which are currently allowed to be scheduled (Joo: col. 5: lines 20-25).

Regarding claim 4, the combination of Hughes and Joo also discloses determining a priority for each ingress means for sending the cells (Hughes: col. 12: lines 41-43; and col. 17: lines 56 – col. 18: line 2).

Regarding claim 5, though the combination of Hughes and Joo also discloses the priority for each ingress means is based on the combination of send opportunities (Hughes: Multicast Grant Preference Pointer and Multicast Round Robin Pointer; col. 17: line 63 – col. 18: line 54).

Regarding claims 6-7, the combination of Hughes and Joo also discloses the step of e) filling a multicast schedule in accordance with full fanout of the first priority assigned to each ingress means (Hughes: col. 17: lines 12-29; and col. 17: line 51 – col. 18: line 55 ). Though the combination of Hughes and Joo does not explicitly specify a blank multicast schedule, but it is obvious the schedule must be blank before the filling since there would be no switch frame selection done yet.

Regarding claim 8, the combination of Hughes and Joo also discloses step e) further comprises the step of: (ii) filling in as much of the fanout of the next priority ingress means and subsequent ingress means as possible to complete the schedule (col. 17: lines 30-39).

As multicasting provides an efficient way to transmit information from point-to-multipoints, it would have been obvious to one of ordinary skill in the art at the time the invention was made necessary transmitting information for a cell contained in the multicasting

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routing table can be used in Hughes' crosspoint switch scheduler, motivated by the need to conserve bandwidth and improve efficiency of the communications system.

***Allowable Subject Matter***

4. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Claims are considered allowable when reading the claims none of the references of record, in light of the specification, alone or in combination, disclose or suggest the combination limitations specified in the claim including selecting fanouts of ingress means in accordance with multicast egress credit allocated to each egress means

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Chang et al (US 6,804,731); Alasti et al (US 6,757,246); Achilles et al (US 6,707,824); Brandis et al (US 6,654,343); Li (US 6,795,433); Lee et al (US 6,600,743); Lee et al (US

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6,490,285); Ooms et al (US 6,347,090); DeSimone et al (US 6,011,782); Virgile (US 5,898,686); and Doeringer et al (US 5,361,256).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 571-272-3073. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vkn

  
**KENNETH VANDERPUYE**  
**PRIMARY EXAMINER**